

Exhibit A
English Translation of JP-08-196565

[TITLE OF THE INVENTION] DISPOSABLE DIAPER
CLAIMS

[1] A disposable diaper comprising a liquid-pervious topsheet, a liquid-impervious backsheet and a liquid-absorbent core interposed between these two sheets, said disposable diaper being characterized by that:

said core is divided in its thickness direction into upper and lower core wherein said upper core is divided, in a zone destined to come in contact with the wearer's buttock, into front and rear cores so that a rear end of said front core and a front end of said rear core are spaced from each other by a desired dimension, and said topsheet covering upper surface of said upper core is folded along said rear end and said front end toward said lower core and the portion of said topsheet folded in this manner is tucked between said upper and lower cores to form pockets adapted to receive and to retain feces discharged by the wearer.

[DETAILED DESCRIPTION OF THE INVENTION]

[0001]

[TECHNICAL FIELD OF THE INVENTION]

The present invention relates to a disposable diaper and particularly to a disposable diaper provided with pockets adapted to receive and to retain feces discharged by the wearer.

[0002]

[RELATED ART]

It is well known in the disposable diaper to provide a liquid-absorbent core with a depression adapted to retain feces discharged by the wearer. For example, Japanese Laid-Open Utility Model Application Gazette No. 1994-5614 discloses an arrangement in which the zone of the liquid-absorbent core facing the wearer's buttock is provided with a depression having an opening normally closed by a valve-like portion defined by the topsheet. Feces discharged by the wearer pushes out this valve-like portion to flow into the depression. Thereupon the valve-like portion is closed again to prevent feces from flowing

back and coming in contact with the wearer's skin.

[0003]

[PROBLEM TO BE SOLVED BY THE INVENTION]

However, such diaper of prior art has been accompanied with a problem that the depression formed by a part of the core should be effectively prevented from getting out of its desired shape and, to this end, the inner wall of the depression should be hardened or wrapped with a liquid-pervious sheet which is more durable than the topsheet. Otherwise, fine fluff pulp and/or super-absorbent polymer particles would leak out through a gap of the valve-like portion and give the wearer significantly uncomfortable feeling. The core is usually wrapped with tissue paper. However, wet strength of tissue paper is extremely low and can not effectively serve as means to prevent fluff pulp and/or super-absorbent polymer particles from leaking.

[0004]

In view of the problem as has been described above, it is a principal object of the present invention to solve the problem by construct the core by upper and lower layers wherein the upper core is divided in front and rear cores spaced from each other in a back-and-forth direction so as to define a trough along which the topsheet is tucked between the upper and lower cores.

[0005]

[MEASURE TO SOLVE THE PROBLEM]

The object set forth above is achieved, according to the present invention, by a measure as will be described below.

[0006]

More specifically, the object set forth above is achieved by an improvement in the disposable diaper comprising a liquid-pervious topsheet, a liquid-impervious backsheet and a liquid-absorbent core interposed between these two sheets.

[0007]

The improvement according to the present invention is characterized by that the core is divided in its thickness

direction into upper and lower core wherein the upper core is divided, in a zone destined to come in contact with the wearer's buttock, into front and rear cores so that a rear end of the front core and a front end of the rear core are spaced from each other by a desired dimension, and the topsheet covering upper surface of the upper core is folded along the rear end and said front end toward the lower core and the portion of the topsheet folded in this manner is tucked between the upper and lower cores to form pockets adapted to receive and to retain feces discharged by the wearer.

[0008]

[FUNCTIONING]

In the diaper constructed in this manner, the portion of the topsheet tucked between the upper and lower cores forms pocket(s) adapted to open toward the rear end and/or the front end of the diaper whereby to receive and to retain feces discharged by the wearer.

[0009]

[DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS]

Details of the disposable diaper according to the present invention will be more fully understood from the description given hereunder in reference with the accompanying drawings.

[0010]

Fig. 1 is a perspective view showing a diaper 1 as partially broken away and Fig. 2 is a sectional view taken along a line II-II in Fig. 1. It should be noted that Fig. 1 shows the diaper 1 in its developed state and Fig. 2 shows the diaper 1 in its state curved in a back-and-forth direction of the diaper 1.

[0011]

Referring to Fig. 1, the diaper 1 comprises a liquid-pervious topsheet 2, a liquid-impervious backsheet 3 and a liquid-absorbent core 4 and defines, in a back-and-forth direction, a front waist region 6, a rear waist region 7 and a crotch region 8 extending between these two waist regions 6, 7. Transversely opposite side edges of the diaper 1 partially

describe circular arcs destined to surround wearer's thighs and, along these side edges, elastic members 9 are attached in stretched state to the inner surface of the topsheet 2 or the backsheet 3. Transversely opposite side edge portions of the rear waist region 7 are provided with tape fasteners 10 conventionally used for such article as described herein. Along an end portion of the rear waist region 7 as viewed in the back-and-forth direction of the diaper 1, a waist-surrounding elastic member 11 is attached in stretched state to the inner surface of the topsheet 2 or the backsheet 3. The crotch region 8 includes a zone placed aside toward the rear waist region 7 and adapted to come in contact with wearer's buttock, across which a trough 15 extends in a transverse direction.

[0012]

As will be best seen in Fig. 2, the core 4 is divided in its thickness direction into an upper core layer 20 and a lower core 21 wherein the upper core 20 comprises a front core 20A and a rear core 20B arranged in the back-and-forth direction with the trough 15 therebetween. More specifically, a rear end 22 of the front core 20A and a front end 23 of the rear core 20B are spaced from each other by a desired dimension in the back-and-forth direction so as to define side walls of the trough 15, respectively. A front end 24 of the front core 20 and a rear end 25 of the rear core 20B are bonded to the lower core 21 by means of adhesive 26. The topsheet 2 covering the upper core 20 is folded along the side walls of the trough 15 toward the lower core 21 and a portion of the topsheet 2 folded in this manner is tucked between the upper and lower cores 20, 21 so as to form a front pocket 28 adapted to open toward the rear end of the diaper 1 and a rear pocket 29 adapted to open toward the front end of the diaper 1. These front and/or the rear pockets 28, 29 may be largely opened as the front core 20A and/or the rear core 20B are or is spaced from the lower core 21 in the thickness direction.

[0013]

In the trough 15, the topsheet 2 is folded and tucked over

its full width (See Fig. 1) and sections of the topsheet 2 put flat together in the vicinity of the transversely opposite side edges of the diaper 1 are bonded together in order to prevent an anxiety that any amount of body waste might leak out between these sections put flat together.

[0014]

In the diaper 1 constructed in such manner, feces discharged by the wearer is reliably received by the front and rear pockets 28, 29 as indicated by arrows in Fig. 2 without an apprehension that feces might spread on the topsheet 2 and stain the wearer's skin. Particularly when loose passage is discharged by the wearer, these front and rear pockets 28, 29 will be significantly effective. It should be noted here that one of the front and rear pockets 28, 29 may be eliminated so far as it is unnecessary to provide one of these two pockets 28, 29. The diaper 1 may be additionally provided along the transversely opposite side edges with a pair of elastically stretchable barriers (or flaps) well known per se extending in the back-and-forth direction and normally biased to rise above the surface of the diaper 1 facing the wearer's skin and thereby to prevent loose passage might leak sideways beyond the transversely opposite ends of the trough 15.

[0015]

In the diaper 1, the top- and backsheets 2, 3 as well as the core 4 may be formed by the material selected from those conventionally used in the relevant field of art. Bonding of the respective members may be carried out using, in addition to hot melt adhesive or the like, a welding technique effective for heat-sealable material. As well known, the core 4 may be wrapped with tissue paper to prevent fluff pulp and/or super-absorbent polymer from getting out of a desired shape.

[0016]

[EFFECT OF THE INVENTION]

The diaper according to this invention ensures that feces, particularly loose passage discharged by the wearer can be reliably received and retained in the pocket(s) adapted to open

toward the rear end and/or the front end of the diaper and therefore it is not apprehended that feces or loose passage might stain the wearer's skin. The liquid-absorbent core is covered with the topsheet and, if desired, may be additionally wrapped with tissue paper to avoid a possibility that fluff pulp and/or super-absorbent polymer constituting the core might fall off from the diaper.

[BRIEF DESCRIPTION OF THE DRAWINGS]

[FIG. 1]

Fig. 1 is a perspective view showing a typical embodiment of the diaper according to the invention as partially broken away.

[FIG. 2]

Fig. 2 is a sectional view taken along a line II-II in Fig. 1 as the diaper being curved in a back-and-forth direction of the diaper.

[IDENTIFICATION OF REFERENCE NUMERALS USED IN THE DRAWINGS]

- 1 diaper
- 2 topsheet
- 3 backsheet
- 4 core
- 20 upper cores
- 21 lower core
- 20A front core
- 20B rear core
- 28 pocket (front pocket)
- 29 pocket (rear pocket)

[ABSTRACT]

[OBJECT] The present invention aims to provide a disposable diaper provided with pocket(s) adapted to receive and to retain feces discharged by the wearer.

[CONSTRUCTION TO ACHIEVE THE OBJECT] In a diaper 1 comprising a liquid-pervious topsheet 2, a liquid-impervious backsheet 3 and a liquid-absorbent core 4 interposed between these two sheets 2, 3, the core 4 consists of an upper core 20 and a lower core 21 wherein the upper core 20 consists of a front core 20A and a rear core 20B spaced, in a zone destined to come in contact with the wearer's buttock, from each other by a desired dimension in a back-and-forth direction of the diaper 1. The topsheet 2 covering the upper core 20 is folded in this zone and tucked between the upper and lower cores 20, 21 so as to form pockets 28, 29 adapted to receive and to retain feces discharged by the wearer.